

# HISTORICAL INVESTIGATION SPECIAL REPORT S/R 7

## TABULATION OF LIFETIME COAL CONSUMPTION K-701 Power Station / Boiler House

### INTRODUCTION:

The K-25 Environmental Restoration Department (Mr. Milton Stanley) requested a search of documents that would record the lifetime coal consumption by the K-701 Boiler House operations. The period of concern spans from May, 1944 (start of operations) through October, 1962 (shutdown of Power Station). An easy request turned out to require more time to answer than first expected. Former employees having knowledge of the power station operations all stated that continuing records of coal consumption and coal analyses were maintained in the power station administrative offices. However, after the power station shutdown, the records may have been stored in another depository or could have been destroyed, but no definitive answer could be found.

Eventually, with the help of John Arrowood and Gentry Hunt, equivalent data were found in the K-25 Plant monthly and quarterly reports, which are to be found in the K-1034 Plant Records Vault and in the K-1002 Library.

### DISCUSSION:

The K-25 Environmental Restoration Division requested data related to the lifetime consumption of coal used in the K-701 Power Production / Boiler House facility. The subject facility operated from May 1944 through its shutdown on October 31, 1962. Thereafter, the TVA supplied power to the K-25 complex.

The requested data were found in monthly and quarterly reports prepared by the Oak Ridge Gaseous Diffusion Plant operations, and which are detailed on the attached summation.

### CONTACTS/INFORMATION RESOURCES:

John Arrowood, K-25 Central Library, K-1002, 4-9696  
Retrieved quarterly and monthly reports retained in the Library.

Gentry Hunt, K-25 Information Services, K-1001, 4-8263  
Retrieved monthly reports retained in the K-1034 Records Vault.

Mary Ross, Manager, Central Accounting, 4-9471  
Identified Bill Watson as a good information source.

Bill Watson, retired, Powell, TN 947-7658  
Former member of Central Accounting. Bill deciphered the Users Code that appears in the referenced reports.

**Coal Consumption, S/R 7**

**Doug Janney, Electrical Engineering Specialist, 4-9448**

One time manager of Power Station / Electrical Operations. Provided general information regarding power generation operations and usage of different fuels. He recounted the periods of partial shutdown of the power plant for scheduled routine equipment maintenance. Suggested contacts with J. C. Elrod and T. C. Wilson.

**J. C. Elrod, retired, Oak Ridge, TN, 483-5509**

Formerly associated with Power Operations (1944 - 1962). Transferred to X-10 in 1963, in charge of Utilities Operations. He remembered when the power station converted to gas operation in conjunction with the East Tennessee Natural Gas Co. (ETNG) -- 20-year contract with the government. The government's contract flow rate of approximately 85,000 MCF/day was about 90% of ETNG system flow. Elrod recalled that records of power station operations were maintained in Bldg. K-703. When the station was shut down, the records were probably relocated. He has no idea where they may be, if they still exist. Elrod suggested contact with T. C. Wilson.

**Jim Dalton, Power and Utilities, 4-3003**

Jim is not aware of the existence of the coal consumption records. He offered to check with his staff. Jim suggested contacts with J. C. Elrod and T. C. Wilson.

**T. C. Wilson, retired, Farragut, TN, 671-2500**

Mechanical Engineer, graduate of Clemson University. Lifetime associate of power station operations on the mechanical side of the house. T. C. Wilson displayed a fountain of knowledge with regard to the power station operations, fuel usage, problems and solutions. T. C. has a very engaging personality, and shows an in-depth knowledge of general power operations and problem solving. T. C. Wilson stated he has served as an expert witness in court cases involving power production operations. His recall of the K-25 Power Station operations with focus on specific problems and their resolution is most impressive. T. C. is a very good information resource.

# TABULATION OF LIFETIME COAL CONSUMPTION

## K-701 POWER STATION / BOILER HOUSE (1)

REPORT NUMBER	PERIOD COVERED	TONS USED DURING PERIOD (2)	CUMULATIVE CONSUMPTION	OTHER FUELS USED (3) REMARKS
KZ-6822, PT 1	Jan. 1944	0.00	0.00	
KZ-6822, PT 2	Feb. 1944	0.00	0.00	
KZ-6822, PT 3	Mar. 1944	0.00	0.00	
KZ-6822, PT 4	Apr. 1944	0.00	0.00	
KZ-6822, PT 5	May. 1944	3071.74	3,071.74	#3 Fuel Oil - 143076 gal.
KZ-6822, PT 6	Jun. 1944	6906.26	9,978.00	#3 Fuel Oil - 173300 gal.
KZ-6822, PT 7	Jul. 1944	9271.06	19,249.06	#3 Fuel Oil - 158684 gal.
KZ-6822, PT 8	Aug. 1944	13111.60	32,360.66	#3 Fuel Oil - 35040 gal.
KZ-6822, PT 9	Sep. 1944	14202.10	46,562.76	#3 Fuel Oil - 69961 gal.
KZ-6822, PT 10	Oct. 1944	19644.14	66,206.90	#3 Fuel Oil - 27352 gal.
KZ-6822, PT 11	Nov. 1944	31999.18	98,206.08	#3 Fuel Oil - 28802 gal.
KZ-6822, PT 12	Dec. 1944	34706.30	132,912.38	#3 Fuel Oil - 25581 gal.
KZ-6823, PT 1	Jan. 1945	37167.71	170,080.09	#3 Fuel Oil - 49209 gal.
KZ-6823, PT 2	Feb. 1945	51418.39	221,498.48	#3 Fuel Oil - 9860 gal.
KZ-6823, PT 3	Mar. 1945	57918.62	279,417.10	#3 Fuel Oil - 16790 gal.
KZ-6823, PT 4	Apr. 1945	64808.66	344,225.76	#3 Fuel Oil - 19650 gal.
KZ-6823, PT 5	May. 1945	64260.24	408,486.00	#3 Fuel Oil - 13660 gal.
KZ-6823, PT 6	Jun. 1945	72962.23	481,448.23	#3 Fuel Oil - 2950 gal.
KZ-6823, PT 7	Jul. 1945	54713.04	536,161.27	#3 Fuel Oil - 19603 gal.
KZ-6823, PT 8	Aug. 1945	73922.51	610,083.78	#3 Fuel Oil - 17100 gal.
KZ-6823, PT 9	Sep. 1945	62194.05	672,277.83	#3 Fuel Oil - 0 gal.
KZ-6823, PT 10	Oct. 1945	52088.00	724,365.83	#3 Fuel Oil - 16192 gal.
KZ-6823, PT 11	Nov. 1945	61530.00	785,895.83	#3 Fuel Oil - 3375 gal.
KZ-6823, PT 12	Dec. 1945	62002.00	847,897.83	#3 Fuel Oil - 5500 gal.
KZ-6824, PT 1	Jan. 1946	52467.40	900,365.23	#3 Fuel Oil - 22670 gal.
KZ-6824, PT 2	Feb. 1946	46054.90	946,420.13	#3 Fuel Oil - 22550 gal.
KZ-6824, PT 3	Mar. 1946	48831.60	995,251.73	#3 Fuel Oil - 10700 gal.
KZ-6824, PT 4	Apr. 1946	49843.20	1,045,094.93	#3 Fuel Oil - 39935 gal.
KZ-6824, PT 5	May. 1946	49192.60	1,094,287.53	#3 Fuel Oil - 6890 gal.
KZ-6824, PT 6	Jun. 1946	40820.20	1,135,107.73	#3 Fuel Oil - 12800 gal.
KZ-6824, PT 7	Jul. 1946	51238.90	1,186,346.63	#3 Fuel Oil - 7100 gal.
KZ-6824, PT 8	Aug. 1946	57140.00	1,243,486.63	#3 Fuel Oil - 6178 gal.
KZ-6824, PT 9	Sep. 1946	53607.70	1,297,094.33	#3 Fuel Oil - 4650 gal., Bunker C oil - 730580 gal.

(1) Tabulated data obtained from plant monthly and/or quarterly reports

User Code: MR

Stores Symbol: S2R

(2) Coal classification -- Bituminous. Average ash content about 20%

(3) Oil data presented for information only - not essential part of subject tabulation. Oil data provides partial explanation for variations in coal consumption. Bunker C oil supplemented coal and gas as a boiler fuel. #3 Fuel Oil served primarily as an ignition fuel, and when needed, subsidized the burning of coal. Other factors are scheduled equipment unit shutdowns for maintenance operations.

KZ-6824, PT 10	Oct. 1946	52898.80	1,349,991.13	#3 Fuel Oil - 3700 gal., Bunker C oil - 0
KZ-6824, PT 11	Nov. 1946	51284.70	1,401,275.83	#3 Fuel Oil - 8200 gal., Bunker C oil - 0
KZ-6824, PT 12	Dec. 1946	50572.80	1,451,848.63	#3 Fuel Oil - 7000 gal., Bunker C oil - 10722 gal.
KZ-6825, PT 1	Jan. 1947	54438.50	1,506,287.13	#3 Fuel Oil - 8500 gal., Bunker C oil - 4703 gal.
KZ-6825, PT 2	Feb. 1947	45910.40	1,552,197.53	#3 Fuel Oil - 0 gal., Bunker C oil - 25273 gal.
KZ-6825, PT 3	Mar. 1947	55507.40	1,607,704.93	#3 Fuel Oil - 21300 gal., Bunker C oil - 1700 gal.
KZ-6825, PT 4	Apr. 1947	56416.50	1,664,121.43	#3 Fuel Oil - 3800 gal., Bunker C oil - 35325 gal.
KZ-6825, PT 5	May. 1947	51419.10	1,715,540.53	#3 Fuel Oil - 1100 gal., Bunker C oil - 3000 gal.
KZ-6825, PT 6	Jun. 1947	49374.10	1,764,914.63	#3 Fuel Oil - 9400 gal., Bunker C oil - 101390 gal.
KZ-6825, PT 7	Jul. 1947	58051.80	1,822,966.43	#3 Fuel Oil - 17800 gal., Bunker C oil - 0
KZ-6825, PT 8	Aug. 1947	68864.30	1,891,830.73	#3 Fuel Oil - 3050 gal., Bunker C oil - 0
K-10, Part 1	Sep. 1947	59914.10	1,951,744.83	#3 Fuel Oil - 1550 gal., Bunker C oil - 0
K-10, Part 2	Oct. 1947	49472.53	2,001,217.36	#3 Fuel Oil - 4500 gal., Bunker C oil - 177185 gal.
K-10, Part 3	Nov. 1947	70288.20	2,071,505.56	#3 Fuel Oil - 0 gal., Bunker C oil - 0 gal., Coal for TVA 20982 tons.
K-10, Part 4	Dec. 1947	30107.80	2,101,613.36	#3 Fuel Oil - 0 gal., Bunker C oil - 0, Coal for TVA 1497.1 tons
K-10, Part 5	Jan. 1948	58724.99	2,160,338.35	#3 Fuel Oil - 300 gal., Bunker C oil - 0, coal for TVA 8596.01 tons
K-158, Part 2	Feb. 1948	65008.80	2,225,347.15	#3 Fuel Oil - 5000 gal., Bunker C oil - 124183 gal.
K-158, Part 3	Mar. 1948	52993.90	2,278,341.05	#3 Fuel Oil - 0 gal.
K-158, Part 4	Apr. 1948	53597.90	2,331,938.95	#3 Fuel Oil - 21200 gal., Bunker C oil - 11400 gal.
K-158, Part 5	May. 1948	50420.50	2,382,359.45	#3 Fuel Oil - 12800 gal., Bunker C oil - 170400 gal.
K-158, Part 6	Jun. 1948	61180.90	2,443,540.35	#3 Fuel Oil - 8050 gal., Bunker C oil - 0
K-252, Part 1	Jul. 1948	71464.50	2,515,004.85	#3 Fuel Oil - 0 gal., Bunker C oil - 0
K-252, Part 2	Aug. 1948	59666.20	2,574,671.05	#3 Fuel Oil - 9050 gal., Bunker C oil - 0
K-252, Part 4	Sep. 1948	64384.30	2,639,055.35	#3 Fuel Oil - 0 gal., Bunker C oil - 0
K-384	10/1/48 - 12/31/48	185691.00	2,824,746.35	Bunker C Oil = 92,800 gal.

K-384	1/1/49 -- 3/31/49	184122.00	3,008,868.35	Bunker C Oil = 23,000 gal.
K-464	4/1/49 -- 6/30/49	163490.00	3,172,358.35	#3 Fuel Oil , Bunker C oil = 20,600 gal
K-520	7/1/49 -- 9/30/49	166315.00	3,338,673.35	#3 Fuel Oil = 25,700 gal.
K-560	10/1/49 -- 12/31/49	116064.00	3,454,737.35	#3 Fuel Oil = 17,400 gal. Installation of gas consumption equipment completed during December.
K-600	1/1/50 -- 3/31/50	17035.00	3,471,772.35	Boiler fuel changed to gas. Partial operation with pulverized coal due to gas supply problems: gas line strainer screens became plugged.
K-636	4/1/50 -- 6/30/50	569.00	3,472,341.35	#3 Fuel Oil= 9000 gal.
K-638	7/1/50 -- 9/30/50	240.00	3,472,581.35	#3 Fuel Oil= 41,100 gal.
K-638	10/1/50 -- 12/31/50	27428.00	3,500,009.35	#3 Fuel Oil = 0 gal.
K-639	1/1/51 -- 3/31/51	59841.00	3,559,850.35	#3 Fuel Oil = 0 gal.
K-640	4/1/51 -- 6/30/51	33320.00	3,593,170.35	#3 Fuel Oil = 24,300 gal.
K-800	7/1/51 -- 9/30/51	24199.00	3,617,369.35	#3 Fuel Oil = 14,400 gal.
K-801	10/1/51 -- 12/31/51	11606.00	3,628,975.35	#3 Fuel Oil = 6,150 gal.
K-802	1/1/52 -- 3/31/52	9533.00	3,638,508.35	#3 Fuel Oil = 3,100 gal.
K-803	4/1/52 -- 6/30/52	1347.00	3,639,855.35	#3 Fuel Oil = 2,450 gal.
K-958	7/1/52 -- 9/30/52	0.00	3,639,855.35	#3 Fuel oil - 0 gal.
K-959	10/1/52 -- 12/31/52	0.00	3,639,855.35	#3 Fuel Oil = 10,800 gal.
K-960	1/1/53 -- 3/31/53	44930.00	3,684,785.35	#3 Fuel Oil = 6,200 gal.
K-961	4/1/53 -- 6/30/53	9383.00	3,694,168.35	#3 Fuel Oil = 1,450 gal. Bunker C oil - 315,313: supply depleted
K-1050	7/1/53 -- 9/30/53	0.00	3,694,168.35	#3 Fuel Oil - 0 gal.
K-1051	10/1/53 -- 12/31/53	41839.00	3,736,007.35	#3 Fuel Oil = 1,300 gal.
K-1052	1/1/54 -- 3/31/54	65378.00	3,801,385.35	#3 Fuel Oil = 0 gal.
K-1053	4/1/54 -- 6/30/54	7601.00	3,808,986.35	#3 Fuel Oil = 0 gal.
K-1150	7/1/54 -- 9/30/54	419.00	3,809,405.35	#3 Fuel Oil = 0 gal.
K-1151	10/1/54 -- 12/31/54	56860.00	3,866,265.35	#3 Fuel Oil = 0 gal.
K-1152	1/1/55 -- 3/31/55	56294.00	3,922,559.35	#3 Fuel Oil = 0 gal.
K-1153	4/1/55 -- 6/30/55	3294.00	3,925,853.35	#3 Fuel Oil = 0 gal.
K-1250	7/1/55 -- 9/30/55	41.00	3,925,894.35	#3 Fuel Oil = 0 gal.
K-1251	10/1/55 -- 12/31/55	68666.00	3,994,560.35	#3 Fuel Oil = 0 gal.
K-1252	1/1/56 -- 3/31/56	49540.00	4,044,100.35	#3 Fuel Oil = 0 gal.
K-1253	4/1/56 -- 6/30/56	0.00	4,044,100.35	#3 Fuel Oil = 0 gal.
K-1350	7/1/56 -- 9/30/56	0.00	4,044,100.35	#3 Fuel Oil = 0 gal.
K-1351	10/1/56 -- 12/31/56	41222.00	4,085,322.35	#3 Fuel Oil = 0 gal.
K-1352	1/1/57 -- 3/31/57	84674.00	4,169,996.35	#3 Fuel Oil = 0 gal.
K-1353	4/1/57 -- 6/30/57	9413.00	4,179,409.35	#3 Fuel Oil = 0 gal.
K-1360	7/1/57 -- 9/30/57	39.00	4,179,448.35	#3 Fuel Oil = 0 gal.
K-1361	10/1/57 -- 12/31/57	13778.00	4,193,226.35	#3 Fuel Oil = 0 gal. Gas usage significantly dropped.
K-1362	1/1/58 -- 3/31/58	66323.00	4,259,549.35	#3 Fuel Oil = 0 gal.
K-1363	4/1/58 -- 6/30/58	13116.00	4,272,665.35	#3 Fuel Oil = 0 gal.
K-1410	7/1/58 -- 9/30/58	4393.00	4,277,058.35	#3 Fuel Oil = 0 gal.

K-1411	10/1/58 -- 12/31/58	146841.00	4,423,899.35	#3 Fuel Oil = 0 gal.
K-1412	1/1/59 -- 3/31/59	195267.00	4,619,166.35	#3 Fuel Oil = 0 gal.
K-1413	4/1/59 -- 6/30/59	101293.00	4,720,459.35	#3 Fuel Oil = 0 gal.
K-1450	7/1/59 -- 9/30/59	90489.00	4,810,948.35	#3 Fuel Oil = 0 gal.
K-1451	10/1/59 -- 12/31/59	168780.00	4,979,728.35	#3 Fuel Oil = 0 gal.
K-1452	1/1/60 -- 3/31/60	213018.00	5,192,746.35	#3 Fuel Oil = 0 gal. Gas consumption drastically reduced.
K-1453	4/1/60 -- 6/30/60	100526.00	5,293,272.35	#3 Fuel Oil = 0 gal. Electric facility transferred to city of Oak Ridge.
K-1500	7/1/60 -- 9/30/60	61175.00	5,354,447.35	#3 Fuel Oil = 0 gal. Gas consumption drastically reduced.
K-1501	10/1/60 -- 12/31/60	170940.00	5,525,387.35	#3 Fuel Oil = 0 gal.
K-1502	1/1/61 -- 3/31/61	201344.00	5,726,731.35	#3 Fuel Oil = 0 gal.
K-1503	4/1/61 -- 6/30/61	88350.00	5,815,081.35	#3 Fuel Oil = 0 gal.
K-1504	7/1/61 -- 9/30/61	0.00	5,815,081.35	#3 Fuel Oil = 0 gal. Natural gas usage low.
K-1505	10/1/61 -- 12/31/61	58145.00	5,873,226.35	#3 Fuel Oil = 0 gal. Operated at one boiler level
K-1506	1/1/62 -- 3/31/62	82616.00	5,955,842.35	#3 Fuel Oil = 0 gal.
K-1507	4/1/62 -- 6/30/62	9341.00	5,965,183.35	#3 Fuel Oil = 0 gal.
K-1600	7/1/62 -- 9/30/62	0.00		One boiler on natural gas entirely.
K-1601	10/1/62 -- 12/31/62			#3 Fuel Oil = 0 gal. Scheduled shutdown of power station at 11:30 pm, Oct. 31, 1962. One boiler on natural gas. Thereafter, all power, regular or emergency, supplied by TVA.
TOTAL, IN TONS			5,965,183.35	

May 1944 → June 1962  
5.97 million tons of  
coal burned